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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/636,081

08/06/2003

Pramod K. Gupta

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08/12/2009

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EXAMINER

PARA, ANNETTE H

ART UNIT

PAPER NUMBER

1661

NOTIFICATION DATE

DELIVERY MODE

08/12/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@weyerhaeuser.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/636,081	<b>Applicant(s)</b> GUPTA ET AL.	
	<b>Examiner</b> ANNETTE H. PARA	<b>Art Unit</b> 1661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13, 17-19, 21, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17-19, 21, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11122004 09232004 03202009</u> .                              | 6) <input type="checkbox"/> Other: _____                          |

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DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/12/2009 has been entered.

Status of the Claims

Claims 1-13, 17-19, 21, 23 and 24 are rejected. Claims 14-16, 20 and 22 are cancelled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-13, 17-19, 21, 23 and 24 remain rejected under 35 U.S.C.102 (b)** as being clearly anticipated by Pullman et al. (US 5,294,549 published on March, 15 1994).

The claims are drawn to a method for producing conifer somatic embryos by cultivating pre-cotyledonary cells in a medium comprising nutrient then transferring them to a medium comprising abscisic acid, gibberellin and activated charcoal as an absorbent for a period of one week to two weeks. And finally, transferring the pre-cotyledonary somatic embryos to a development medium for a period from 9 to 14 weeks to produce cotyledonary somatic embryos.

Pullman et al teach a method of cultivating conifer pro-cotyledonary somatic embryos in a maintenance medium comprising nutrients that sustain the embryos. The maintenance medium has an

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osmolality of 170mM/Kg to about 240 mM/Kg (column 15, lines 1-3). The pro-cotyledonary are then transferred to a singulation medium comprising gibberellin and/or abscisic acid at concentrations of 0.05 and 15 mg/L (col. 13, lines 40-60) and comprising also activated charcoal (col. 13, lines 50-54), for at least 2 weeks (col. 8, lines 32). This medium has a reduced osmotic level compared to the one of the maintenance medium, thus less than 170 mM/Kg (column 15, lines 13-14). Finally, the pro-cotyledonary embryos are transferred to a development medium wherein the osmolality is above about 400 mM/Kg (col. 15, line 60). Pullman et al. also teach the use of activated charcoal at a concentration of 2.5g/L (Table 2). Further Pullman et al. teach media with a pH of 5.7 (Table 1). Fifty percent and 75% of the embryos population taught by Pullman et al. is inherently at the same developmental stage, absent evidence to the contrary. Pullman et al. teach that this method can be used for many species including loblolly pine (col. 7, lines 50-60). Pullman et al. is silent in the time frame period claimed in step (c) and but since Pullman et al. follow the same steps than those claimed by the instant Application, the time frame characteristic of 9 to 14 weeks is enough for inherent anticipation, absent evidence to the contrary.

Comment

No Claims are allowed

Response to argument received on June 12, 2009

Applicant's arguments have been fully considered but they are not persuasive.

Applicants argue that:

The Examiner characterizes Pullman et al. as disclosing a method of cultivating conifer pre-cotyledonary somatic embryos in a maintenance medium comprising nutrients that sustain the embryos, having an osmolality of 170 mM/Kg to about 240 mM/Kg (Col. 15, lines 1-3), followed by transfer to a singulation medium comprising gibberellin and/or abscisic acid at a concentration of 0.05 and 15 mg/L (Col. 13, lines 40-60) and activated charcoal (Col. 13, lines 50-54) for at least three weeks (Col. 15, lines 23-26), and finally, transfer to a development medium wherein the osmolality is about 400 mM/Kg (Col. 15, line 60). As acknowledged by the Examiner, Pullman et al. does not disclose or suggest cultivating pre-cotyledonary pine embryogenic cells for a period from one week to two weeks in or on a synchronization medium, as claimed. In order to anticipate, the reference must disclose, either expressly or inherently, each and every element of the claim. M.P.E.P. § 2131. Therefore, the claimed invention, as amended, is not anticipated by Pullman et al. Moreover, Pullman et al. does not suggest or provide any motivation to carry out the claimed method as amended, which comprises cultivating pre-cotyledonary pine embryogenic cells for a period from one week to two weeks in or on a synchronization medium for at least the following reasons. Pullman et al. discloses an intermediate culturing step referred to as "singulation" for Douglas-fir, which Pullman states is "not necessary for other species." See Pullman et al. at Col. 8, lines 18-21. Pullman et al. teaches the transfer of pre-cotyledonary Douglas-fir somatic embryos from a maintenance medium to a

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singulation medium for at least three weeks, followed by transfer to a development medium. As described in Examples 1-7, which are directed to methods for improving Douglas-fir embryo development, "Late stage Douglas-fir proembryos were singulated in a three step liquid shake culture as outlined above." Example 2 at Col. 15, line 68, to Col. 16, line 2. As described in Example 1, a preferred schedule for the singulation step in Douglas-fir is "one week on a medium containing 10mg/L ABA, a second week on a medium containing 5mg/L ABA, and a third week on a medium also with 5mg/L ABA." Col. 15, lines 10-27.

It is further noted that in Examples 8 and 9 of Pullman et al., which are directed to methods for improving Norway Spruce embryo development, no singulation step was carried out, which is consistent with the statement made earlier in Pullman et al. that the singulation is required for Douglas-fir but is "not necessary for other species." See Pullman et al. at Col. 8, lines 18-21. As further described in Examples 8 and 9, Norway Spruce late stage proembryos were plated directly from a maintenance medium onto solid development media containing various concentrations of ABA and GA. As described in Examples 1 and 2 of the instant specification, the present inventors determined through experimentation that a synchronized population of mature pine somatic embryos could be obtained by culturing pre-cotyledonary pine embryogenic cells in a synchronization media containing activated charcoal and at least one of abscisic acid and a gibberellin for one to two weeks, followed by incubation in a development media inhibited precocious embryo development and greening, while promoting synchronization of the cultures, resulting in embryos very uniform in size in comparison to control cultures. See specification at page 19, lines 19-31. As further described in Example 2 of the instant specification, it was experimentally demonstrated that in the absence of the step of culturing in a synchronization medium (i.e., control cultures grown in maintenance medium and directly transferred to development media, similar to Examples 8 and 9 in Pullman et al.), the cultures contained embryos that were cleaving, growing and forming embryo suspensor masses, with embryos seen in many different stages. Specification at page 19, lines 1-5.

Because Pullman et al. does not disclose or suggest culturing pine embryos in a synchronization medium for one to two weeks prior to development, as claimed, the cited reference fails to teach or suggest all the elements of the claimed invention, and therefore does not anticipate or render obvious the method of the claimed invention. Thus, without the benefit of the applicants' disclosure, one of skill in the art would not be motivated by the teachings of the cited reference or by the general knowledge in the art to arrive at the claimed invention, and would have no reasonable expectation of success in practicing the invention as claimed.

Accordingly, because Pullman et al. does not disclose every element of Claim 1 and because the general knowledge of one skilled in the art would not provide any basis or motivation to arrive at the claimed invention, Claims 1-13, 17-19, 21, 23, and 24 are believed to be clearly patentable under both 35 U.S.C. §§ 102 and 103 over Pullman et al.

These arguments are not found persuasive because Pullman et al. teach culturing of proembryos in a maintenance medium then transferring the late proembryos in a singulation medium comprising active gibberellins and abscisic acid and finally transferring these proembryos to an embryo development medium (column 15, lines 5-35). Pullman et al. state that adding the singulation step is beneficial for improvement of proembryos quality (column 8, lines 5-14). Pullman et al. also teach that "*for virtually all coniferous species a supply of exogenous abscisic acid is a useful hormone in the development from proembryos to cotyledonary embryos...this was always used in combination with an absorbent such as*

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*activated charcoal.*”(column 9, lines 49-55). Pullman et al. then add that the addition of the combination of Gibbereline and Absisic acid reduces tendency to precocious germination. The singulation step taught by Pullman et al. is identical to the synchronization step as claimed. Thus, the method taught by Pullman et al. is identical to the present method as it comprises every step of the claimed method, and is presumed to inherently possess the same properties. Pullman et al. teach a singulation step (synchronization) which encompass two or three transfers at weekly intervals, which is one to two weeks as claimed (column 8, line 32). The method described in example 1 is for Douglas-fir embryos but earlier Pullman et al. state: *It appears now that the inclusion of between 0.05 and 15 mg/L preferably about .1-5 mg/L of selected active gibberellins and abscisic acid in the late proembryo development media is also beneficial for improvement of proembryo quality...These may then transferred to an embryo development medium...*(column 8, lines 4-14). Pullman et al also clearly state: ***species other than Douglas-fir can be advantageously cultured by beginning early cotyledonary embryo development in a series of media similar to those used for Douglas-fir singulation.***(column 8, lines 49-52). Pullman et al. is silent about the uniformity in size of the embryos obtained but a reference which is silent about a claimed invention's feature is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. *In re Oelrich*, 212 USPQ 323 (CCPA 1981). Pullman et al. clearly anticipate the claimed application as amended.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH

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shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

*Future Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Annette H. Para whose telephone number is (571) 272-0982. The examiner can normally be reached Monday through Thursday from 5:30 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975. The fax number for the organization where the application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either the Private PAIR or the Public PAIR. Status information for unpublished applications is available through the Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov> . Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Annette H Para/  
Primary Examiner

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